



## Overview

*Congo (Brazzaville) is among the top five oil producers in Sub-Saharan Africa. Oil production comes almost entirely from offshore oil fields. Congo exports almost all of its oil production, and the largest recipients are China and the European Union.*

Congo (Brazzaville), also known as the Republic of the Congo, is a mature oil producer with declining output at most of its fields. Congo's economy is heavily dependent on its oil production as it accounted for almost 87% of the country's export revenues and almost 80% of the government's total revenue in 2011, according to the International Monetary Fund (IMF). A vast majority of oil and natural gas exploration and production activities in Congo are conducted offshore.

Congo holds sizable proved natural gas reserves, but only small amounts are commercialized because of the lack of infrastructure. Congo also may hold large oil sands deposits (petroleum deposits of bitumen also known as tar sands) and Eni, an Italian oil company, recently launched a feasibility study. If the project is undertaken, it would be the first tar sands project in Africa.

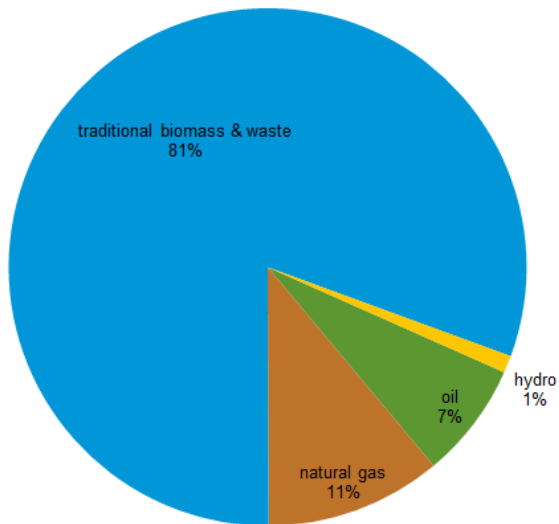
Congo also has extensive hydropower potential, but most of it remains untapped. Despite Congo's rich energy resources, the electrification rate is low, especially in rural areas, mainly because of a lack of electricity infrastructure. According to the latest (2010) estimate from the World Bank, 37% of the country has access to electricity, leaving more than 2.5 million people without access.

The Congolese civil war (1997-1999) left much of the country's transmission and distribution infrastructure damaged, especially in southern Brazzaville (the capital city) and in the Pool, Bouenza, and Niari regions, which have not yet been restored. The government has looked to restore and expand the distribution network, but until then, wood fuel will remain a dominant fuel, especially in rural areas. The latest (2011) U.S. Energy Information Administration (EIA) estimate indicates that more than 80% of Congo's primary energy consumption was from traditional biomass and waste (typically consisting of wood, charcoal, manure, and crop residues). This high share represents the use of biomass and waste to meet off-grid heating and cooking needs, mainly in rural areas.



Source: : U.S. Department of State

Total primary energy consumption in Congo (Brazzaville), 2011



Source: U.S. Energy Information Administration

## Management of oil and natural gas industries

*Total (France) and Eni (Italy) are the leading oil and natural gas producers in Congo. The companies produce nearly three-fourths of Congo's total oil production.*

### Regulation

The Ministry of Mines, Energy, and Water Resources manages the country's oil and gas resources, while exploration and production operations are governed by production sharing agreements (PSAs). Congo's national hydrocarbon company, Societe Nationale des

Petroles du Congo (SNPC), manages Congolese government-owned shares in hydrocarbon operations. SNPC has an operating interest alongside international oil companies (IOCs) through PSAs, which also include tax breaks and a royalty system. There are several IOCs, such as Chevron, Perenco, Murphy Oil, and SOCO Internationals, that participate in the oil and gas industries, but the companies that dominant the industries are Total and Eni.

### *Major companies*

Total and Eni have both operated in Congo since 1968. Total is the country's leading oil producer through its subsidiary, Total E&P Congo. In December 2013, Qatar Petroleum's international unit became a shareholder of Total E&P Congo and now holds 15% of its capital.

Total produced 107,000 barrels per day (bbl/d) of petroleum and other liquids (or total oil) in 2012, accounting for almost 40% of the country's total production. Most of Total's oil production comes from its deepwater Moho-Bilondo license and the Nkosso oil field. The company also produced 31 million cubic feet per day (MMcf/d) of natural gas in 2012, which came from associated gas at its oil fields.

Eni is the leading natural gas producer in Congo. Natural gas is used for re-injection into oil wells or processed to fuel power plants in populated areas, as a part of Eni's access to energy projects initiative. Eni's gas production in Congo has increased from 67.9 MMcf/d in 2010 to 120.5 MMcf/d in 2012. The company also accounted for more than 35% of the country's total oil production (98,000 bbl/d) in 2012. Most of Eni's oil and gas production is from the M'Boundi field, which the company hopes to expand in the future.

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## Oil

*Congo's first deepwater field came online in 2008, boosting oil production. However, over the past few years, oil production decreased as a result of natural declines at mature fields. A few deepwater projects are slated to come online in the next five years, but in the near term oil production is expected to continue to fall.*

Congo holds 1.6 billion barrels of proved crude oil reserves, according to the latest estimates from *Oil & Gas Journal* (OGJ) released in January 2014. In the late 1970s, Congo emerged as a significant oil producer. Production expanded considerably during the 1990s, but output fell for most of the 2000s as oil fields matured. In 2008, Congo's first deepwater field, Moho-Bilondo, came online and temporarily reversed the country's production trend. As a result, in 2010, Congo produced 311,000 bbl/d of total oil (petroleum and other liquids), surpassing the country's previous peak. Total oil production has since fallen gradually as a result of natural declines, averaging slightly less than 280,000 bbl/d in 2013.

### *Exploration and production*

The large offshore Moho-Bilondo oil field, operated by Total, is the chief contributor to the increase in oil production from 2008 to 2010. The oil field came online in April 2008 and reached plateau output at 90,000 bbl/d in June 2010. However, the field's production is

declining, according to Total's 2012 annual report. Moho-Bilondo is the country's first deepwater project and marks the largest successful expedition to tap into Congo's deepwater reserves. Additionally, three other oil fields—the Ikalou complex, Azurite, and Libondo—started producing after 2008, according to IHS Global Insight and reports from Total.

Despite the addition of new fields over the past few years, Congo's total oil production is projected to decline in the short term. The decline is attributed to maturing fields and a slowdown in field development, according to IHS World Energy Markets. As a result, the government is keen to develop onshore and offshore fields to supplement production at mature fields. SNPC plans to hold a licensing round in 2014 to award 10 onshore and offshore blocks.

In the medium term, offshore deepwater prospects in Congo have the potential to boost production again. According to Total, the northern (Moho North project) and southern (Phase 1B) parts of the license that encompasses the Moho-Bilondo field hold additional hydrocarbon resources. Total completed basic engineering studies on Phase 1B and the Moho North project in 2012, and in March 2013, Total announced it would start to develop the projects. The company expects production at Phase 1B will start in 2015 and Moho North in 2016, reaching a total of 140,000 barrels of oil equivalent per day (boe/d) in 2017.

In early 2012, Congo and Angola agreed to jointly develop and share profits from the Lianzi field, a deepwater field located within the two countries' maritime border in the Lower Congo Basin. Chevron is the field's operator (31.25%), with interest held by Total (36.75%), Eni (10%), Sonangol (10%), SNPC (7.5%), and the Portuguese company Galp Energia (4.5%). According to Chevron, production from Lianzi is expected to start in 2015 and produce a maximum of 46,000 boe/d.

Eni announced that it launched a small pilot feasibility oil sands project in Congo in 2012. Oil sands are unconventional petroleum deposits of bitumen. In 2008, Eni and the Congolese government signed a deal to explore and develop the oil sands deposit located in Tchikatanga and Tchikatanga-Makola, two areas covering a total of 1,790 square kilometers in the south of Congo. According to preliminary studies, the area is estimated to contain up to 2.5 billion barrels of bitumen unrisks (amount of resources in-place without accounting for the portion that can be recovered because it is technically feasible and economically viable) and 500 million barrels of bitumen risks (amount of resources estimated that can be recovered but are not yet discovered). However, it is highly uncertain what level of resources will be discovered or will be economically and technically viable to recover. Eni has said it could potentially cost up to \$7.5 billion to develop. If the project is actually undertaken, it would be the first tar sands project in Africa.

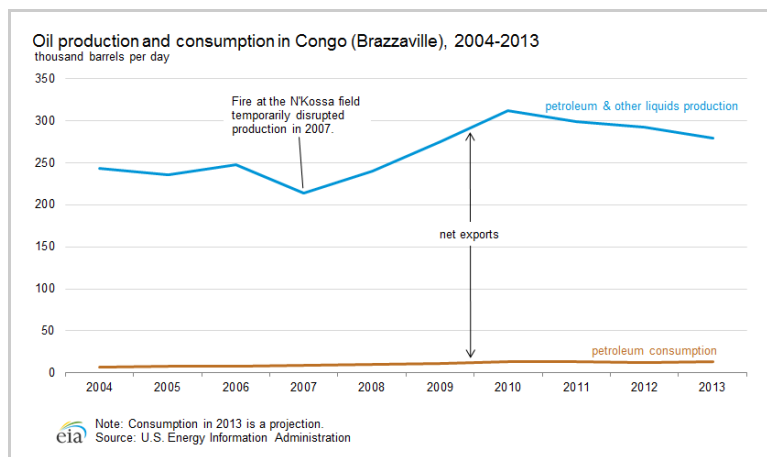
### *Downstream*

Congo has one refinery, the 21,000 bbl/d Congolaise de Raffinage (CORAF) plant in Point-Noire. EIA estimates that total refinery output of petroleum products in 2010 was 13,800 bbl/d. The refinery's poor performance causes it to operate at nearly half capacity. The vast majority of the refinery's output is used to satisfy domestic demand, and the remainder is exported. Congo consumed almost 12,000 bbl/d of petroleum in 2012. For a number of years, the Congolese government proposed to privatize and expand CORAF, but it has not

yet found a committed investor.

## Exports

Congo exports nearly all of the crude oil it produces and sends a small amount to its refinery for domestic consumption. According to analysis of trade data from Global Trade Atlas, EuroStat, and FACTs Global Energy, Congo exported almost 250,000 bbl/d of crude oil in 2012. [China](#) (43%), the European Union (28%), and the United States (12%) are the top destinations for Congolese oil.

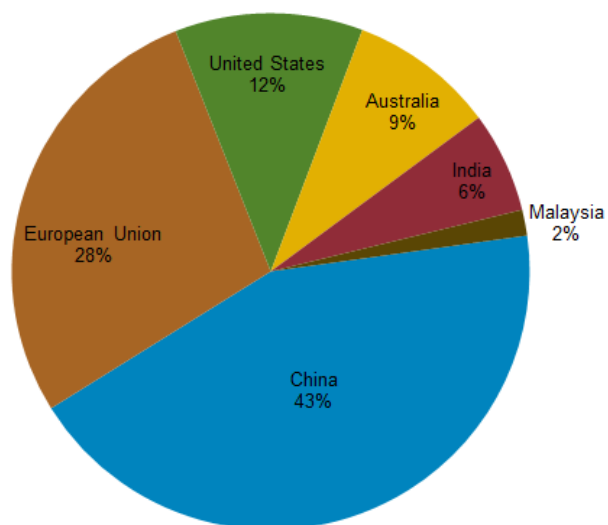


### Moho-Bilondo Complex in Congo (Brazzaville)



Source: Total

### Congo (Brazzaville) crude oil exports, by destination, 2012



Source: U.S. Energy Information Administration based on FACTs Global Energy, Eurostat, and Global Trade Atlas

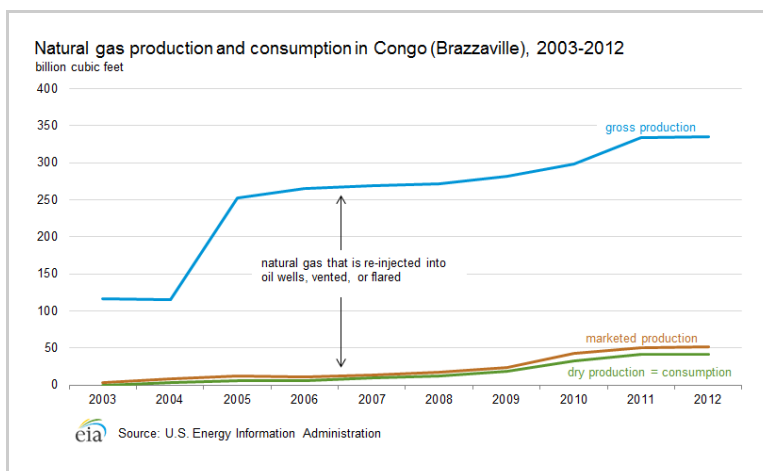
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## Natural gas

*Almost 85% of Congo's natural gas production is re-injected into oil wells to aid oil recovery, vented, or flared (burned off). Eni has led efforts to reduce gas flaring by constructing gas-fueled power plants in Congo.*

Congo holds 3.2 trillion cubic feet (Tcf) of proved natural gas reserves, according to the latest estimates from OGJ, released in January 2014. The country's gross natural gas production was 335 billion cubic feet (Bcf) in 2011, although only 16% (52 Bcf) was marketed or commercially used. Most of the marketed production was consumed domestically in the form of dry natural gas (occurring when associated liquid hydrocarbons are removed). Congo consumed 41 Bcf of dry natural gas in 2012. A majority of the natural gas produced in Congo, 68% (229 Bcf), was re-injected into oil wells to aid oil recovery and 16% (55 Bcf) was flared (burned off) or vented.

Flaring and venting of gas in Congo decreased by 30% over the previous decade, from its peak of 79 Bcf in 2005 to 55 Bcf in 2012. Eni has led efforts to reduce gas flaring and commercialize the gas instead. In 2008, Eni began constructing two gas-fired electric power stations, with the dual purpose of increasing electricity capacity and reducing gas flaring. Eni recently constructed the Centrale Electrique du Congo (CEC), a 300-megawatt (MW) gas-fueled power station that can be expanded to 450 MW by installing steam turbines. The power station is fueled by associated gas from the M'Boundi deposit. The company also recently doubled capacity at the Djeno power station, Centrale Electrique de Djeno (CED), from 25 MW to 50 MW. The Djeno power station also uses associated gas as fuel that was previously flared.



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## Electricity

*Hydropower accounted for more than 60% of Congo's net electricity generation in 2011. There are a number of hydropower projects under consideration for development.*

Société Nationale d'Electricité (SNE), the national electricity company, controls the electricity generation, transmission, and distribution sectors. Power consumption is low in Congo

because of the limited transmission system that mainly serves the country's principal cities, Brazzaville and Point-Noire. According to the latest (2010) estimate from the World Bank, 37% of the country has access to electricity, leaving more than 2.5 million people without access. In urban areas, demand for electricity has increased over the past decade, and Congo has had to rely on power imports to satisfy domestic consumption.

Congo's installed electricity capacity was 148 MW in 2011, according to the latest EIA estimate. Installed capacity increased over the past five years because of the construction of the CEC and CED gas-fueled plants, which mostly serve the densely populated Pointe-Noire area.

Hydropower accounts for a substantial portion of the country's power generation. In 2011, hydropower accounted for more than 60% of net electricity generation, while fossil-fueled electricity made up the remainder. Hydroelectricity is generated from the Imboulou, Bouenza, and Djoue hydroelectric plants. The Imboulou Hydropower Plant, built by the Chinese company CMEC, came online in 2011 and almost doubled Congo's hydroelectric generation to power Brazzaville and several other towns. Additionally, there are plans to upgrade the capacity at the Djoue hydro plant.

Congo's technically feasible hydropower potential is 3,932 MW, but only 4% of this has been developed so far, according to the International Journal on Hydropower and Dams. Projects under consideration include a 150-MW hydroelectric plant in the Bas-Congo Province called Zongo II, a 600-MW plant on the River Tcha in Cameroon to serve both Congo and Cameroon, and a 1,200-MW power station at Sounda Gorge.

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## Notes

- Data presented in the text are the most recent available as of January 29, 2014.
- Data are EIA estimates unless otherwise noted.

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## Sources

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